

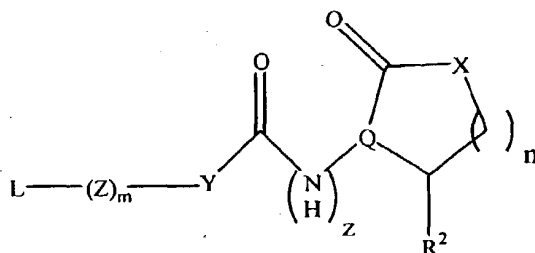
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-15 (canceled)

16. (original) A method for detecting a Gram negative bacteria autoinducer in a sample comprising adding to the sample an antibody in which the antibody specifically binds the autoinducer of a Gram negative bacteria of a compound of Formula (I):

(I)



where X is O, S, N-(C₁-C₆) alkyl, NR², N-phenyl; Y is C₁-C₆ straight or branched alkyl, C₁-C₆ straight or branched alkenyl, C₁-C₆ straight or branched alkynyl; Z is C=O, C=S, CHOH, C=N-NR¹, C=N-OH, C₁-C₈ straight or branched alkyl, C₁-C₈ straight or branched alkenyl, C₁-C₈ straight or branched alkynyl; L is C₁-C₁₈ straight or branched alkyl, C₁-C₁₈ straight or branched alkenyl, C₁-C₁₈ straight branched alkynyl, or -CO₂H, -CO₂R¹, -CHO, -C≡N, -N=C=O, -N=C=S, OH, OR¹, -CH=CH-CH₂Br, -CH=CH-CH₂Cl, -SAc or SH, where R¹ is C₁-C₆ straight or branched alkyl, m is 0 or 1; z is 0 or 1; R² is H, C₁-C₆ straight or branched alkyl, C₁-C₆ straight or branched alkenyl or C₁-C₆ straight or branched alkynyl, or CO₂H; and Q is CH or N; and n is 0-3 with the proviso that when n is 0, X is N-(C₁-C₆ alkyl) or N-phenyl.

17. (currently amended) The method according to claim 16 wherein the autoinducer is produced by a Gram negative bacteria comprising *Aeromonas hydrophila*, *Agrobacterium tumefaciens*, *Burkholderia cepacia*, *Chromobacterium violaceum*, *Enterobacter agglomerans*, *Erwinia stewarti*, *Erwinia carotovora*, *Escherichia coli*, *Nitrosomas europea*, *Photobacterium fischeri*, *Pseudomonas aeruginosa*, *Pseudomonas aureofaciens*, *Rhizobium leguminosarum*, *Serratia liquefaciens*, or *Vibrio harveyi*.

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known bacterial autoinducers (BAIs) and the Gram negative bacteria which produce them are identified in Table 1 below:

Examples of Autoinducers

Table 1

	Gram negative bacteria:	Bacterial autoinducer (BAI):
5	<i>Aeromonas hydrophila</i>	AHAI
	<i>Agrobacterium tumefaciens</i>	N-(3-oxo)-octanoyl -L-homoserine lactone (OOHL)
	<i>Burkholderia cepacia</i>	N-octanoylhomoserine lactone
10	<i>Chromobacterium violaceum</i>	N-hexanoyl-L-homoserine lactone (HHL)
	<i>Enterobacter agglomerans</i>	N-(3-oxo)-hexanoyl-L-homoserine lactone (OHHL)
	<i>Erwinia stewartii</i>	OHHL
	<i>Erwinia carotovora</i>	OHHL
15	<i>Escherichia coli</i>	Structure not yet determined
	<i>Nitrosomas europea</i>	OHHL
	<i>Photobacterium fischeri</i>	OHHL, OOHL; OHL
	<i>Pseudomonas aeruginosa</i>	N-(3-oxododecanoyl)-L-homoserine lactone (PAI-1);
20		N-(butanoyl)-L-homoserine lactone (PAI-2)
	<i>Pseudomonas aureofaciens</i>	Structure not yet determined
	<i>Rhizobium leguminosarum</i>	N-(3-hydroxy)-tetradecanoyl-L-homoserine lactone (HtDeHL)
25	<i>Serratia liquefaciens</i>	PAI-2 (<i>N</i> -butanoyl-L-homoserine lactone)
	<i>Vibrio fischeri</i>	OHHL
	<i>Vibrio harveyi</i>	N-(3-hydroxy)-butanoyl-L-homoserine lactone (HBHL)
30	<i>Yersinia enterocolitica</i>	OHHL, HHL

The Gram negative bacterium *Pseudomonas aeruginosa* is an opportunistic human pathogen that causes infections in immunocompromised hosts. PAI-1 has been shown to inhibit the proliferation of lymphocytes *in vivo* and downregulates expression of tumor necrosis factor and interleukin-12 (Telford et al., 1998, Infect Immun. 66(1):36-42).

Pseudomonas aeruginosa frequently colonizes the lungs of individuals with cystic fibrosis